

# Volunteer Temperature Monitoring

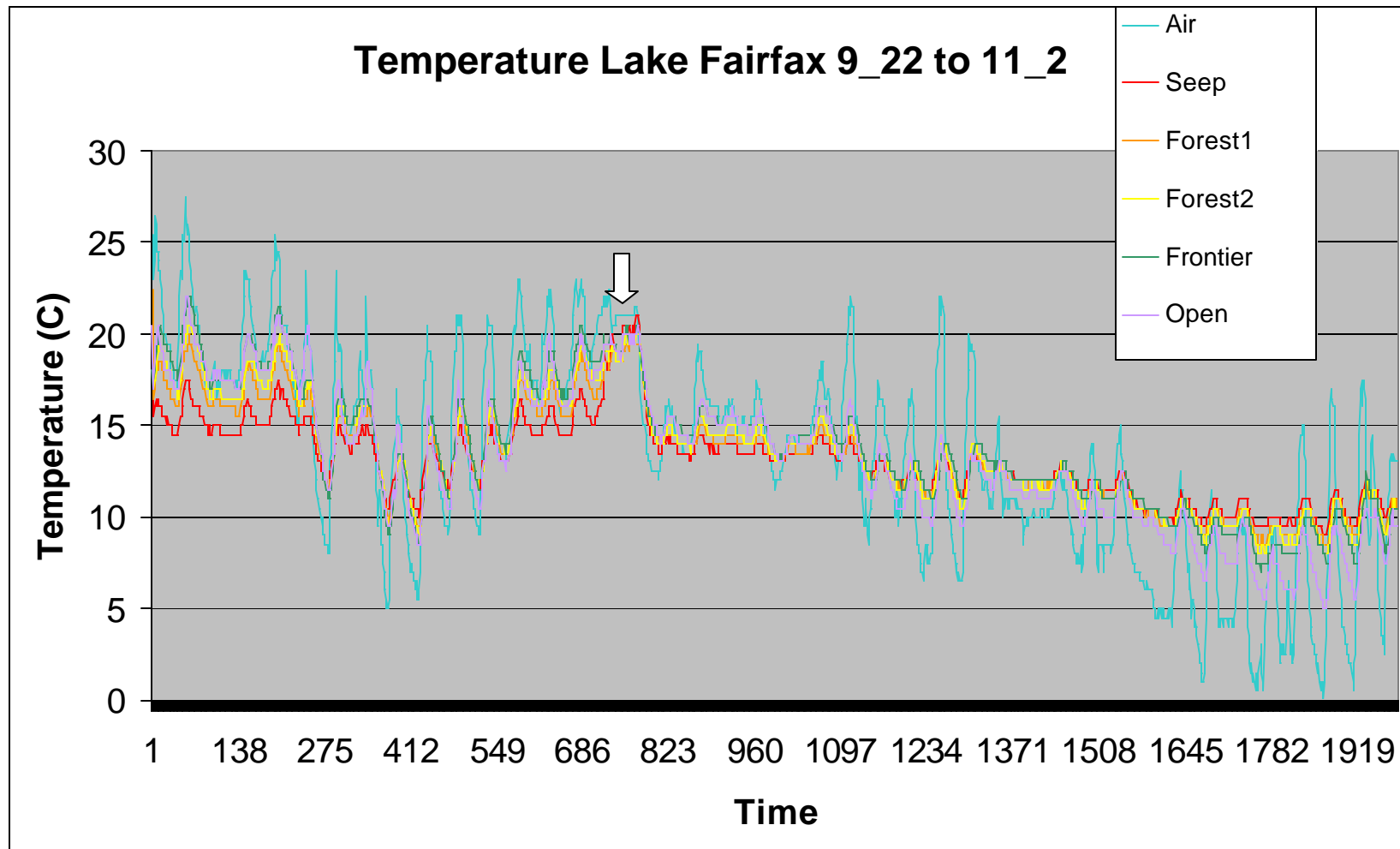
Welcome to the temperature monitoring instructions web site.

The instructions here are for volunteers who have been trained by and are working with the Northern Virginia Soil and Water Conservation District (NVSWCD), the Fairfax County Park Authority (FCPA) and the Dept. of Public Works and Environmental Services (DPWES).

We are monitoring stream temperature in riparian restoration areas.

This is a five year project.

The water temperature data we collect can show seasonal differences, differences between areas we've planted, and areas that aren't planted, even a flood (at the arrow).



# Volunteer Temperature Monitoring



Our first training.



The data logger goes into the stream.



A gentle touch.

# Volunteer Temperature Monitoring

Volunteers should receive training and scheduling through Joanna Cornell, NVSWCD,  
[joanna.cornell@fairfaxcounty.gov](mailto:joanna.cornell@fairfaxcounty.gov).

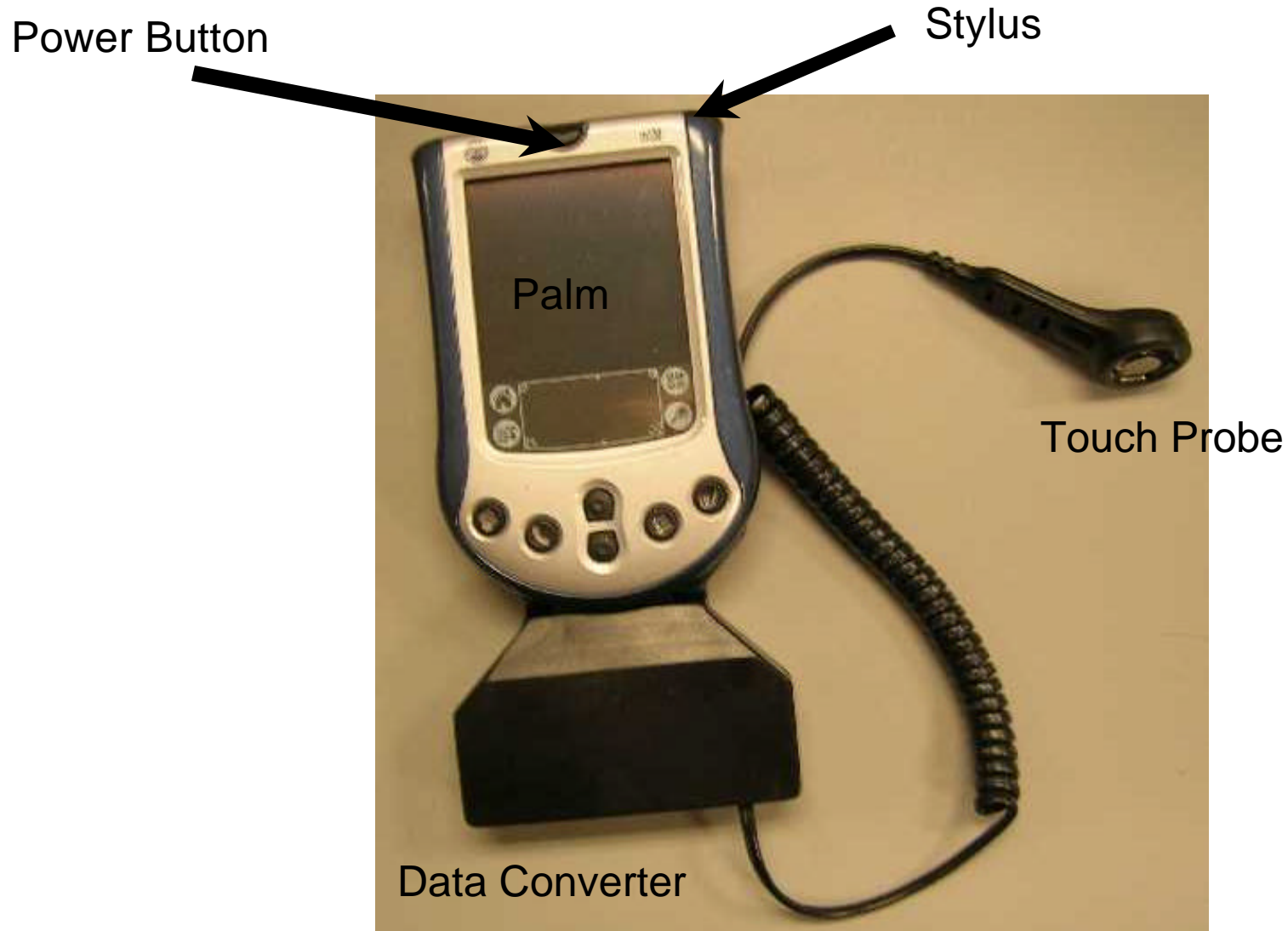
Volunteers will collect the toolkit from the established location.

# Volunteer Temperature Monitoring

- Tool Kit
  - iConnection
  - Paper towels
  - Sharp tool, cable ties
  - Data sheet, writing instrument
  - Site Map and directions
  - Current mission names and numbers & Launch mission names and numbers
  - Extra iButtons and Fobs

# Volunteer Temperature Monitoring

- Temperature datalogger locations are relatively hidden – make sure you have a map of the site.
- Go ahead and find the first site that you will be downloading from, and turn on the Palm.



The iConnection consists of a Palm, a Data Converter and a Touch Probe. Press the black button at the top of the Palm to turn the Palm on. The Palm has a touch sensitive screen. Using a stylus, which can be found on the top right hand side of the palm, tap on the screen to navigate.



The Stylus. Gently tap the screen of the Palm with this plastic tool.

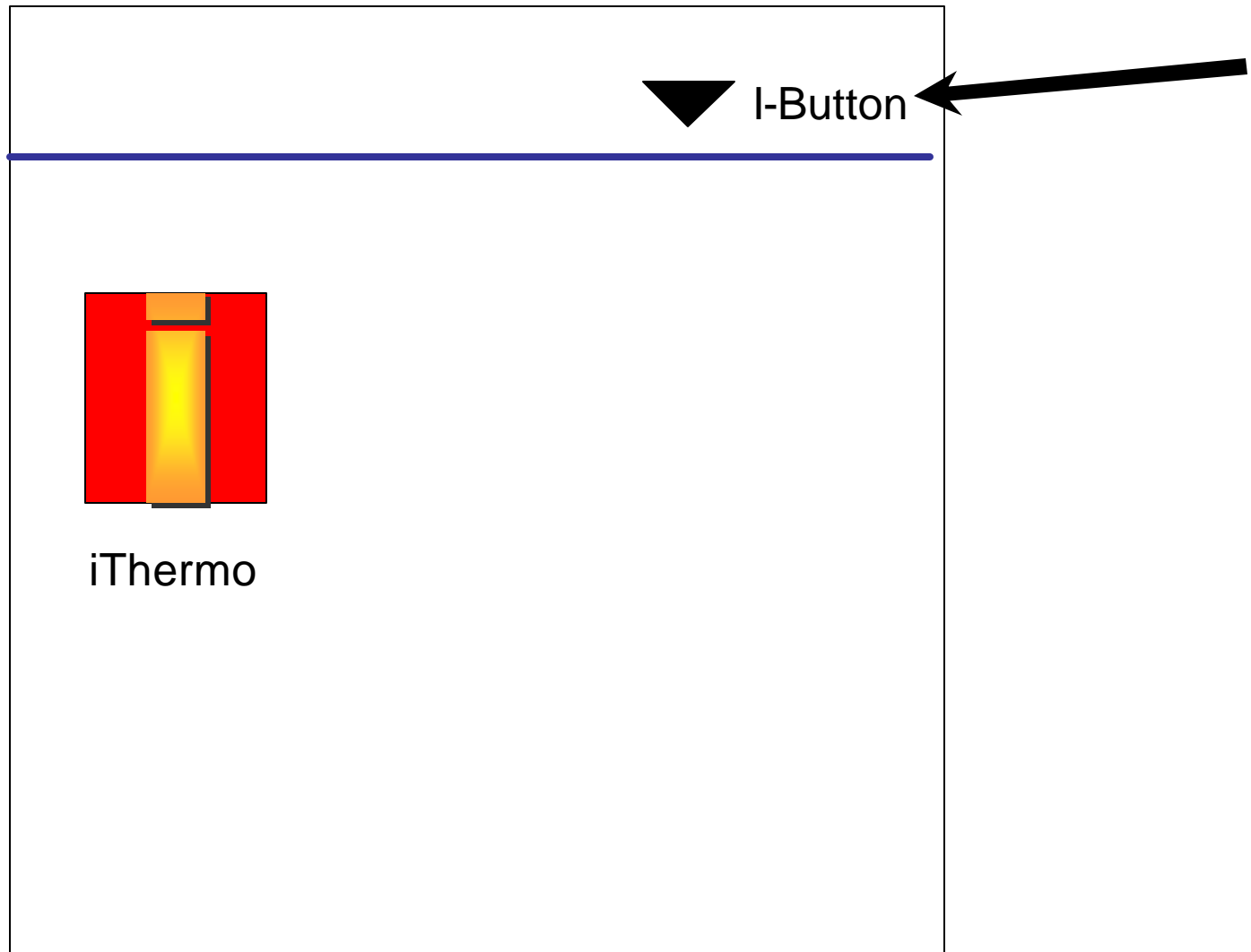




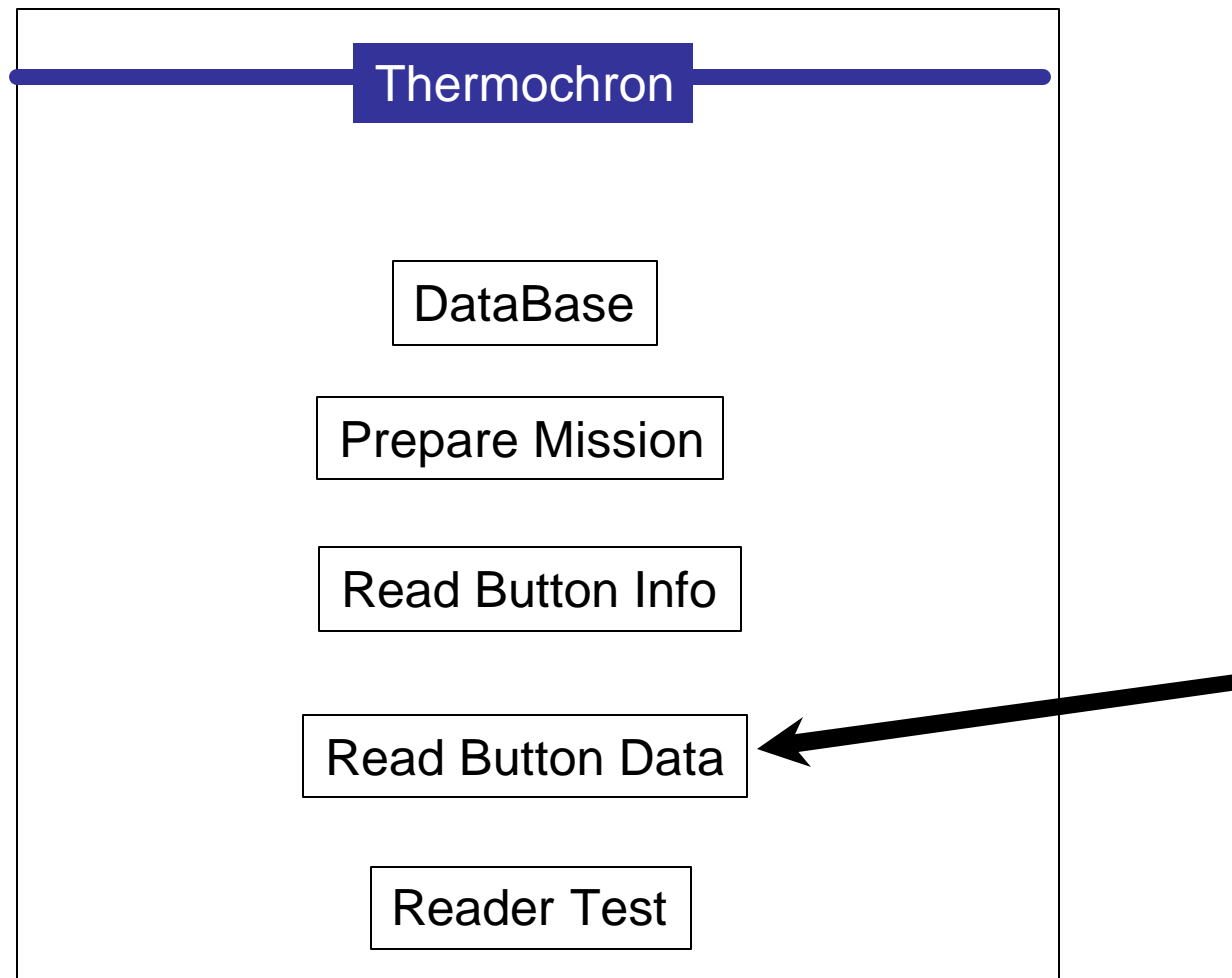
The touch probe. Note, this is NOT waterproof and very sensitive. It requires a very gentle touch! The iButton just fits in the opening of the touch probe, but it doesn't get forced into the opening.



An iButton. These are tiny data loggers and temperature sensors. They can store up to 2048 measurements.



The main screen of the Palm will give you access to the iThermo program. The menu arrow on the top right will get you to this screen if you are in one of the other programs when you turn the Palm on. Go ahead and start the iThermo program now by tapping the screen with the plastic stylus.



Once the iThermo program is open, the main page has five menu options. If you get lost within the program, keep hitting “Back” until you get to this page and start over.

First, we must read the iButton, that is, remove all the data on the datalogger.

The menu item to read an iButton is “Read Button Data.”

The “Mission List”  
has all the missions  
that you’ll be  
launching.

Mission List

0000....M-71... Lake Fairfax Open  
0000....M-61... Lake Fairfax No Mow  
0000....M-51... Lake Fairfax Frontier  
0000....M-41... Lake Fairfax Forest2  
0000....M-31... Lake Fairfax Forest1  
0000....M-21... Lake Fairfax Air  
0000....M-11... Lake Fairfax Seep

New

Search

Back

Careful attention to the number of the site and the name of the site will ensure that the proper readout ends up in the right file and that the new mission is correctly launched. It is good to read through all the missions so you are familiar with which order they are in. But for now, just tap “New.”



Hold the touch probe to the dry iButton to establish a connection. Please remember to be gentle.

MissionData

M-1

New Mission

Not Yet Started

No Data

←

→

Save

Read

Back

The mission read out screen will appear. Tap the “Read” button on the Palm while continuing to hold the probe and the iButton together – this will take a few seconds.

## Alternate Outcome

MissionData Read Info

Name: New Mission  
Number: M-1  
Status: Tap to Display  
Button ID:  
Button Time: 12:00 p, 1/1/00  
Time Alarm: Tap to Display  
Low Temp Alarm: 15 F  
Hi Temp Alarm: 150 F  
Sample Rate:30  
Start Delay: 0  
Mission Start: current date and time  
Mission End: end date and time  
Sample Count: 0  
Instructions: Tap to Display  
Device Count: 0

Save Read Back

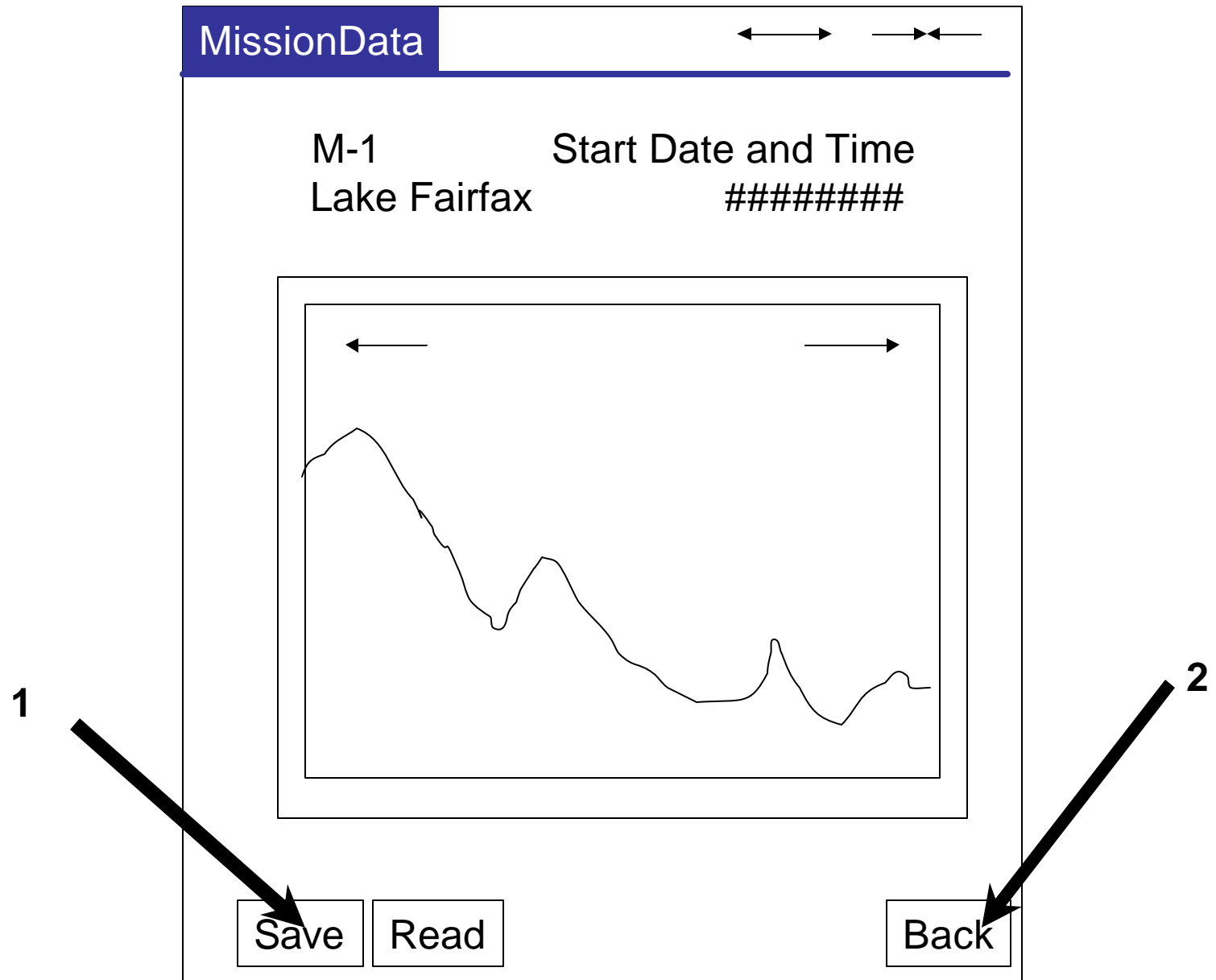
Make sure you are in the  
“Read Info” mode.

1. Gently tap the screen  
over the “Read” polygon.

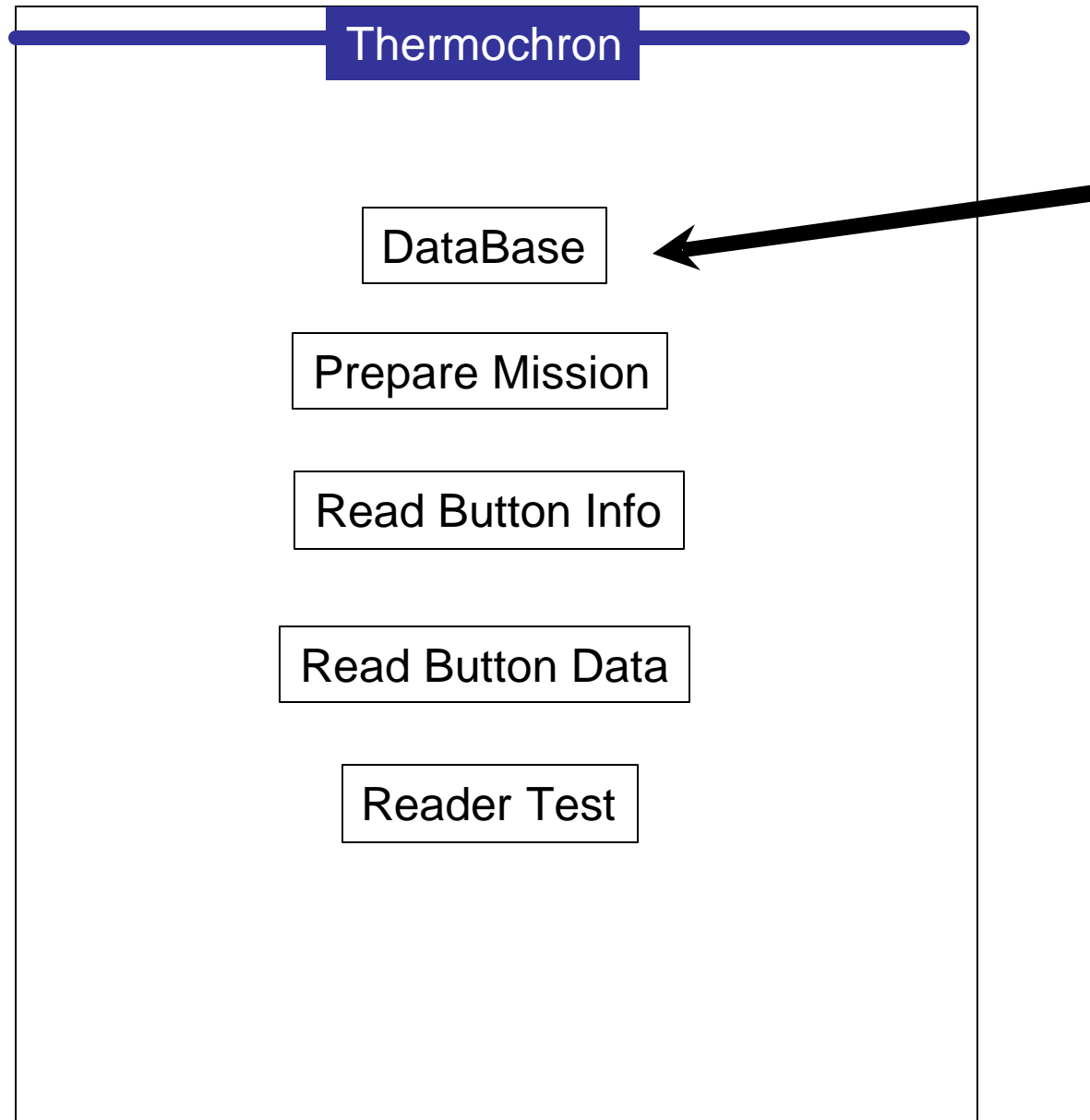
2. Then “Save.”

Sometimes, this generic new mission screen shows up instead of the graph page. Its ok - All you have to do is hit “Read” and “Save.” If you prefer the graph page, you can find that under the “Read Info” menu in the top right hand corner of the screen.





Wait for all the data to read out. Tap “Save” once the data has completely downloaded. Then tap “Back.” You can let go of the iButton temporarily.



The next step is to launch this same iButton so that it will take data for the next 30 days. On the main menu, tap the “DataBase” option.

Mission List

0000....M-71... Lake Fairfax Open  
0000....M-61... Lake Fairfax No Mow  
0000....M-51... Lake Fairfax Frontier  
0000....M-41... Lake Fairfax Forest2  
0000....M-31... Lake Fairfax Forest1  
0000....M-21... Lake Fairfax Air  
0000....M-11... Lake Fairfax Seep  
0000....M-1... Lake Fairfax Seep

New Search Back

Select the new mission that will be launched. **Warning:** The data you just read now appears in this list. Make sure the new mission name matches the name of the old mission, but has the next higher number, e.g. if you downloaded data from mission M-1 Lake Fairfax Seep, you will be launching mission M-11 Lake Fairfax Seep.

**MissionData** ▼ Edit Data

Name: Lake Fairfax Seep  
Number: M-12  
Status: Tap to Display  
Button ID: 00000...  
Button Time: current date and time  
Time Alarm: Tap to Display  
Low Temp Alarm: 15 F  
Hi Temp Alarm: 150 F  
Sample Rate:30  
Start Delay: 984  
Mission Start: start date and time  
Mission End: end date and time  
Sample Count:  
Instructions: Tap to Display  
Device Count: 0

Make sure you are in the "edit data" mode.

Check the name and make sure that is where you are standing.

Check the mission number and make sure that it is the right number that you will be launching.

Tap the Current date and time to synchronize the palm with the iButton.

Make sure the sample rate says **30**.

Make sure the mission start date and time is the current date. If not, tap and select from the options provided.

Check the following things to make sure you've selected the right mission. See Appendix A if you have trouble matching any of the above.

Mission Start



JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP	OCT	NOV	DEC

NOV

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	(29)	30			

Cancel

Today



Select today's date.

Select Start Time Only

Start Time:

End Time:

No Time

8	00
9	05
10	10
11	15
12P	20
1	25
2	30
3	35
4	40
5	45
6	50
7	55

OK

Cancel

Select the closest time to the current time. This way, we will minimize holes in the data set.

**MissionData** ▼ Edit Data

Name: Lake Fairfax Seep  
Number: M-12  
Status: Tap to Display  
Button ID: 00000...  
Button Time: current date and time  
Time Alarm: Tap to Display  
Low Temp Alarm: 15 F  
Hi Temp Alarm: 150 F  
Sample Rate:30  
Start Delay: 984  
Mission Start: start date and time  
Mission End: end date and time  
Sample Count:  
Instructions: Tap to Display  
Device Count: 0

Save Delete Back

Next you'll want to "Save" so that we have a record of what was launched. Then proceed to the "Write Button" screen - gently tap on the words "Edit Data."

MissionData

Edit Data

Read Info

Write Button

Graph Data

Name: Lake Fairfax

Number: M-1

Status: Tap to Display

Button ID: 00000...

Button Time: current date and time

Time Alarm: Tap to Display

Low Temp Alarm: 15 F

Hi Temp Alarm: 150 F

Sample Rate:30

Start Delay: 984

Mssion Start: start date and time

Mission End: end date and time

Sample Count:

Instructions: Tap to Display

Device Count: 0

Save

Delete

Back

The “Write Button” option is the 3rd one on the list. Gently tap and you’ll be sent to the screen where you’ll launch the iButton on its next mission.





Hold the touch probe to the dry iButton to establish a connection. Please remember to be gentle.

The screenshot shows a software interface for mission data entry. At the top, there is a header bar with 'MissionData' on the left and a 'Write Button' on the right, indicated by a downward-pointing triangle. An arrow labeled '1' points to the 'Write Button' with the text 'Check to make sure you're in the Write Button mode'. The main area of the screen displays various mission parameters: Name: Lake Fairfax, Number: M-12, Status: Tap to Display, Button ID: 00000..., Button Time: current date and time, Time Alarm: Tap to Display, Low Temp Alarm: 15 F, Hi Temp Alarm: 150 F, Sample Rate: 30, Start Delay: 984, Mission Start: start date and time, Mission End: end date and time, Sample Count:, Instructions: Tap to Display, and Device Count: 0. At the bottom, there are three buttons: 'Save', 'Start', and 'Back'. An arrow labeled '2' points to the 'Start' button with the text 'Gently tap "start." Wait for the message that says that the mission was successfully launched. Then tap "Save" and "Back" to get to the main menu.'

**MissionData** ▼ Write Button

1 Check to make sure you're in the Write Button mode

Name: Lake Fairfax  
Number: M-12  
Status: Tap to Display  
Button ID: 00000...  
Button Time: current date and time  
Time Alarm: Tap to Display  
Low Temp Alarm: 15 F  
Hi Temp Alarm: 150 F  
Sample Rate: 30  
Start Delay: 984  
Mission Start: start date and time  
Mission End: end date and time  
Sample Count:  
Instructions: Tap to Display  
Device Count: 0

2 Gently tap "start." Wait for the message that says that the mission was successfully launched. Then tap "Save" and "Back" to get to the main menu.

Save Start Back

Sometimes the old mission will not have ended by the time you need to launch. You'll first have to hit 'Yes' in answer to the question, and then 'Start' to successfully launch. If the iButton will not launch, move the touch probe around on the iButton gently to improve the connection. Other tips in Appendix A.

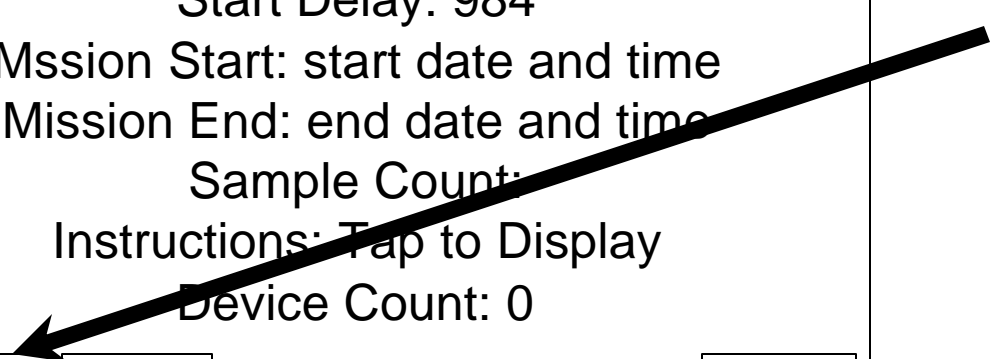
MissionData ▼ Write Button

Name: Lake Fairfax  
Number: M-12  
Status: Tap to Display  
Button ID: 00000...  
Button Time: current date and time  
Time Alarm: Tap to Display  
Low Temp Alarm: 15 F  
Hi Temp Alarm: 150 F  
Sample Rate:30  
Start Delay: 984  
Mssion Start: start date and time  
Mission End: end date and time  
Sample Count:  
Instructions: Tap to Display  
Device Count: 0

Save

Start

Back



1

Then tap “Save” and “Back” to get to the Mission List. You’ll need to tap “Back” again to get to the main menu and read the next iButton.